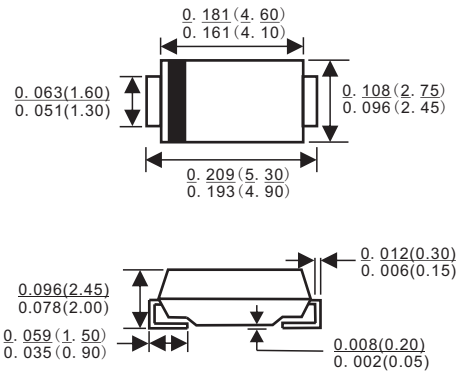
SMAJ SERIES

400Watts Surface Mount Transient Voltage Suppressor



SMA/DO-214AC



Dimensions in inches and(millimeters)

Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- ✧ Typical I_R less than 1μA above 10V
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- ✧ 400 watts peak pulse power capability with a 10 x 1000 us waveform by 0.01% duty cycle (300W above 78V).

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated lead free,
- ✧ Polarity: Indicated by cathode band
- ✧ Standard packaging: 12mm tape
- ✧ Weight: 0.064 gram

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A=25°C, Tp=1ms(Note 1)	P_{PK}	Minimum 400	Watts
Steady State Power Dissipation	Pd	1	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3)	I_{FSM}	40.0	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional Only	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

Notes:
1. Non-repetitive Current Pulse Per Fig. 3 and Derated above T_A=25°C Per Fig. 2.
2. Mounted on 5.0mm² (.013 mm Thick) Copper Pads to Each Terminal.
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.

Devices for Bipolar Applications

1. For Bidirectional Use C or CA Suffix for Types SMAJ5.0 through Types SMAJ188.
2. Electrical Characteristics Apply in Both Directions.

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Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
SMAJ5.0	SMAJ5.0C	6.40	7.30	10	800	5.0	41.67	9.6
SMAJ5.0A	SMAJ5.0CA	6.40	7.00	10	800	5.0	43.48	9.2
SMAJ6.0	SMAJ6.0C	6.67	8.15	10	800	6.0	35.09	11.4
SMAJ6.0A	SMAJ6.0CA	6.67	7.37	10	800	6.0	38.83	10.3
SMAJ6.5	SMAJ6.5C	7.22	8.82	10	500	6.5	32.52	12.3
SMAJ6.5A	SMAJ6.5CA	7.22	7.98	10	500	6.5	35.71	11.2
SMAJ7.0	SMAJ7.0C	7.78	9.51	10	200	7.0	30.08	13.3
SMAJ7.0A	SMAJ7.0CA	7.78	8.60	10	200	7.0	33.33	12.0
SMAJ7.5	SMAJ7.5C	8.33	10.20	1	100	7.5	27.97	14.3
SMAJ7.5A	SMAJ7.5CA	8.33	9.21	1	100	7.5	31.01	12.9
SMAJ8.0	SMAJ8.0C	8.89	10.90	1	50	8.0	26.67	15.0
SMAJ8.0A	SMAJ8.0CA	8.89	9.83	1	50	8.0	29.41	13.6
SMAJ8.5	SMAJ8.5C	9.44	11.50	1	10	8.5	25.16	15.9
SMAJ8.5A	SMAJ8.5CA	9.44	10.40	1	10	8.5	27.78	14.4
SMAJ9.0	SMAJ9.0C	10.00	12.20	1	5	9.0	23.67	16.9
SMAJ9.0A	SMAJ9.0CA	10.00	11.10	1	5	9.0	25.97	15.4
SMAJ10	SMAJ10C	11.10	13.60	1	5	10.0	21.28	18.8
SMAJ10A	SMAJ10CA	11.10	12.30	1	5	10.0	23.53	17.0
SMAJ11	SMAJ11C	12.20	14.90	1	1	11.0	19.90	20.1
SMAJ11A	SMAJ11CA	12.20	13.50	1	1	11.0	21.98	18.2
SMAJ12	SMAJ12C	13.30	16.30	1	1	12.0	18.18	22.0
SMAJ12A	SMAJ12CA	13.30	14.70	1	1	12.0	20.10	19.9
SMAJ13	SMAJ13C	14.40	17.60	1	1	13.0	16.81	23.8
SMAJ13A	SMAJ13CA	14.40	15.90	1	1	13.0	18.60	21.5
SMAJ14	SMAJ14C	15.60	19.10	1	1	14.0	15.50	25.8
SMAJ14A	SMAJ14CA	15.60	17.20	1	1	14.0	17.24	23.2
SMAJ15	SMAJ15C	16.70	20.40	1	1	15.0	14.87	26.9
SMAJ15A	SMAJ15CA	16.70	18.50	1	1	15.0	16.39	24.4
SMAJ16	SMAJ16C	17.80	21.80	1	1	16.0	13.89	28.8
SMAJ16A	SMAJ16CA	17.80	19.70	1	1	16.0	15.38	26.0
SMAJ17	SMAJ17C	18.90	23.10	1	1	17.0	13.11	30.5
SMAJ17A	SMAJ17CA	18.90	20.90	1	1	17.0	14.49	27.6
SMAJ18	SMAJ18C	20.00	24.40	1	1	18.0	12.42	32.2
SMAJ18A	SMAJ18CA	20.00	22.10	1	1	18.0	13.70	29.2
SMAJ19	SMAJ19C	21.13	25.76	1	1	19.0	11.76	34.0
SMAJ19A	SMAJ19CA	21.10	23.30	1	1	19.0	13.00	30.8
SMAJ20	SMAJ20C	22.20	27.10	1	1	20.0	11.17	35.8
SMAJ20A	SMAJ20CA	22.20	24.50	1	1	20.0	12.35	32.4
SMAJ22	SMAJ22C	24.40	29.80	1	1	22.0	10.15	39.4
SMAJ22A	SMAJ22CA	24.40	26.90	1	1	22.0	11.27	35.5
SMAJ24	SMAJ24C	26.70	32.60	1	1	24.0	9.30	43.0
SMAJ24A	SMAJ24CA	26.70	29.50	1	1	24.0	10.28	38.9
SMAJ26	SMAJ26C	28.90	35.30	1	1	26.0	8.58	46.6
SMAJ26A	SMAJ26CA	28.90	31.90	1	1	26.0	9.50	42.1
SMAJ28	SMAJ28C	31.10	38.00	1	1	28.0	8.00	50.0
SMAJ28A	SMAJ28CA	31.10	34.40	1	1	28.0	8.81	45.4
SMAJ30	SMAJ30C	33.30	40.70	1	1	30.0	7.48	53.5
SMAJ30A	SMAJ30CA	33.30	36.80	1	1	30.0	8.26	48.4
SMAJ33	SMAJ33C	36.70	44.90	1	1	33.0	6.78	59.0
SMAJ33A	SMAJ33CA	36.70	40.60	1	1	33.0	7.50	53.3
SMAJ36	SMAJ36C	40.00	48.90	1	1	36.0	6.22	64.3
SMAJ36A	SMAJ36CA	40.00	44.20	1	1	36.0	6.88	58.1
SMAJ40	SMAJ40C	44.40	54.30	1	1	40.0	5.60	71.4
SMAJ40A	SMAJ40CA	44.40	49.10	1	1	40.0	6.20	64.5

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Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
SMAJ43	SMAJ43C	47.80	58.40	1	1	43.0	5.22	76.7
SMAJ43A	SMAJ43CA	47.80	52.80	1	1	43.0	5.76	69.4
SMAJ45	SMAJ45C	50.00	61.10	1	1	45.0	4.98	80.3
SMAJ45A	SMAJ45CA	50.00	55.30	1	1	45.0	5.50	72.7
SMAJ48	SMAJ48C	53.30	65.10	1	1	48.0	4.68	85.5
SMAJ48A	SMAJ48CA	53.30	58.90	1	1	48.0	5.17	77.4
SMAJ51	SMAJ51C	56.70	69.30	1	1	51.0	4.39	91.1
SMAJ51A	SMAJ51CA	56.70	62.70	1	1	51.0	4.85	82.4
SMAJ54	SMAJ54C	60.00	73.30	1	1	54.0	4.15	96.3
SMAJ54A	SMAJ54CA	60.00	66.30	1	1	54.0	4.59	87.1
SMAJ58	SMAJ58C	64.40	78.70	1	1	58.0	3.88	103.0
SMAJ58A	SMAJ58CA	64.40	71.20	1	1	58.0	4.27	93.6
SMAJ60	SMAJ60C	66.70	81.50	1	1	60.0	3.74	107.0
SMAJ60A	SMAJ60CA	66.70	73.70	1	1	60.0	4.13	96.8
SMAJ64	SMAJ64C	71.10	86.90	1	1	64.0	3.51	114.0
SMAJ64A	SMAJ64CA	71.10	78.60	1	1	64.0	3.88	103.0
SMAJ70	SMAJ70C	77.80	95.10	1	1	70.0	3.20	125.0
SMAJ70A	SMAJ70CA	77.80	86.00	1	1	70.0	3.54	113.0
SMAJ75	SMAJ75C	83.30	102.00	1	1	75.0	2.99	134.0
SMAJ75A	SMAJ75CA	83.30	92.10	1	1	75.0	3.31	121.0
SMAJ78	SMAJ78C	86.70	106.00	1	1	78.0	2.88	139.0
SMAJ78A	SMAJ78CA	86.70	95.80	1	1	78.0	3.17	126.0
SMAJ80	SMAJ80C	88.96	108.80	1	1	80.0	2.79	143.2
SMAJ80A	SMAJ80CA	88.80	97.60	1	1	80.0	3.09	129.6
SMAJ85	SMAJ85C	94.40	115.00	1	1	85.0	2.65	151.0
SMAJ85A	SMAJ85CA	94.40	104.00	1	1	85.0	2.92	137.0
SMAJ90	SMAJ90C	100.00	122.00	1	1	90.0	2.50	160.0
SMAJ90A	SMAJ90CA	100.00	111.00	1	1	90.0	2.74	146.0
SMAJ100	SMAJ100C	111.00	136.00	1	1	100.0	2.23	179.0
SMAJ100A	SMAJ100CA	111.00	123.00	1	1	100.0	2.47	162.0
SMAJ110	SMAJ110C	122.00	149.00	1	1	110.0	2.04	196.0
SMAJ110A	SMAJ110CA	122.00	135.00	1	1	110.0	2.26	177.0
SMAJ120	SMAJ120C	133.00	163.00	1	1	120.0	1.87	214.0
SMAJ120A	SMAJ120CA	133.00	147.00	1	1	120.0	2.07	193.0
SMAJ130	SMAJ130C	144.00	176.00	1	1	130.0	1.73	231.0
SMAJ130A	SMAJ130CA	144.00	159.00	1	1	130.0	1.91	209.0
SMAJ140	SMAJ140C	155.68	190.40	1	1	140.0	1.60	250.6
SMAJ140A	SMAJ140CA	155.00	171.00	1	1	140.0	1.76	226.8
SMAJ150	SMAJ150C	167.00	204.00	1	1	150.0	1.49	268.0
SMAJ150A	SMAJ150CA	167.00	185.00	1	1	150.0	1.65	243.0
SMAJ160	SMAJ160C	178.00	218.00	1	1	160.0	1.39	287.0
SMAJ160A	SMAJ160CA	178.00	197.00	1	1	160.0	1.54	259.0
SMAJ170	SMAJ170C	189.00	231.00	1	1	170.0	1.32	304.0
SMAJ170A	SMAJ170CA	189.00	209.00	1	1	170.0	1.45	275.0
SMAJ180	SMAJ180C	200.16	244.80	1	1	180.0	1.24	322.2
SMAJ180A	SMAJ180CA	200.00	220.00	1	1	180.0	1.37	291.6
SMAJ190	SMAJ190C	211.28	258.40	1	1	190.0	1.18	340.1
SMAJ190A	SMAJ190CA	211.00	232.00	1	1	190.0	1.30	307.8
SMAJ200A	SMAJ200CA	224.00	247.00	1	1	200.0	1.23	324.0
SMAJ220A	SMAJ220CA	246.00	272.00	1	1	220.0	1.12	356.0
SMAJ250A	SMAJ250CA	279.00	309.00	1	1	250.0	0.99	405.0
SMAJ300A	SMAJ300CA	335.00	371.00	1	1	300.0	0.82	486.0
SMAJ350A	SMAJ350CA	391.00	432.00	1	1	350.0	0.71	567.0
SMAJ400A	SMAJ400CA	447.00	494.00	1	1	400.0	0.62	648.0
SMAJ440A	SMAJ440CA	492.00	543.00	1	1	440.0	0.56	713.0

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

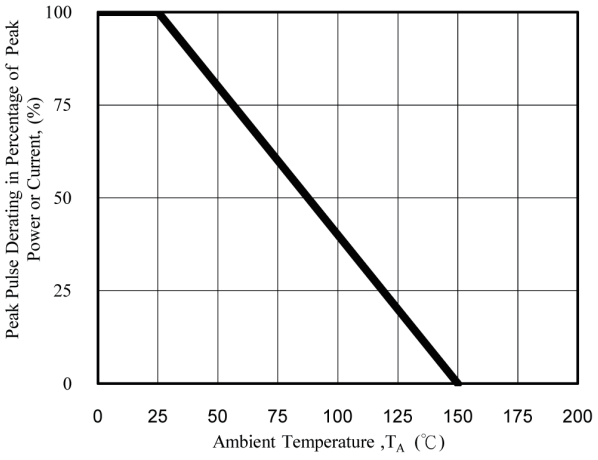


Fig. 1 - Pulse Derating Curve

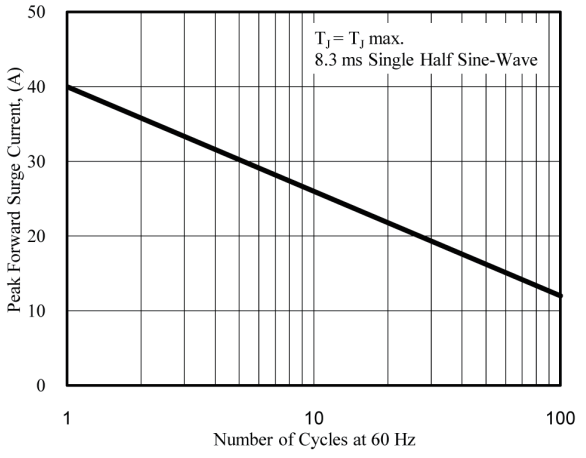


Fig. 2 - Maximum Non-Repetitive Surge Current

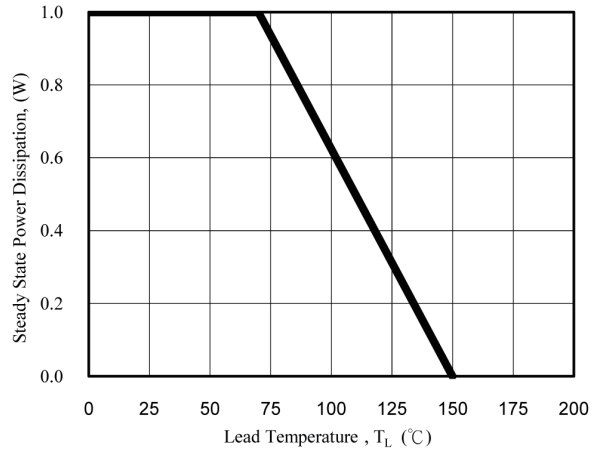


Fig. 3 - Steady State Power Derating Curve

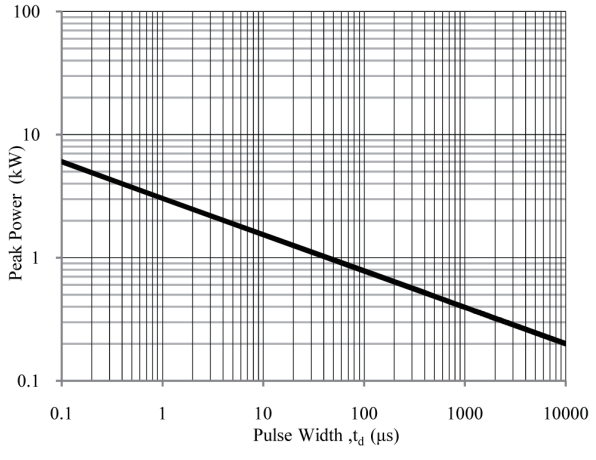


Fig. 4 - Peak Pulse Power Rating Curve

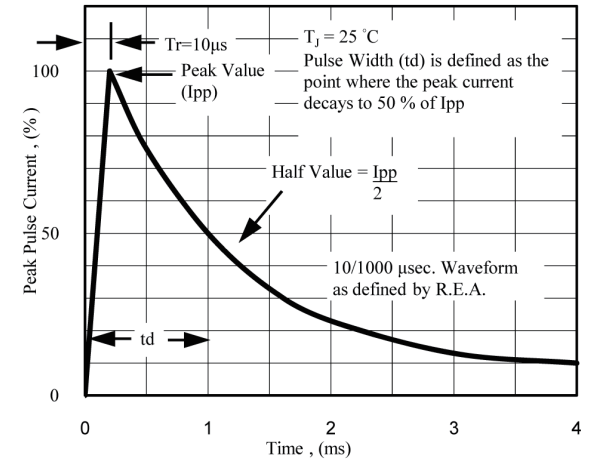


Fig. 5 - Pulse Waveform

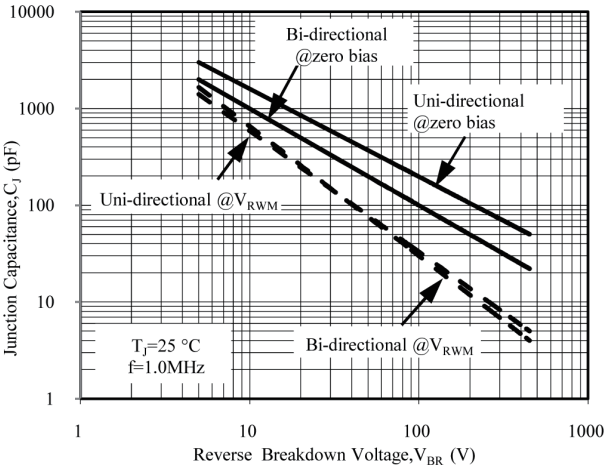


Fig. 6 - Typical Junction Capacitance